2024

AP® Psychology

Sample Student Responses and Scoring Commentary Set 2

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Free-Response Question 2

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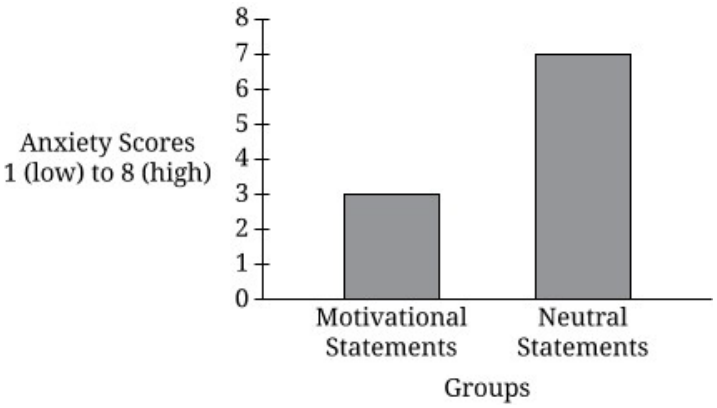
Question 2: Research Design — 7 points

General Considerations

1. Answers must be cogent enough for the meaning to come through. Spelling and grammatical mistakes do not reduce a score, but spelling must be close enough so that the reader is convinced of the word.
2. A response can earn points only if the student clearly conveys what part of the question is being answered. It is possible to infer the part of the question being answered if it is consistent with the order of the question.
3. The response must apply the concept to the prompt. A definition alone will not earn the point, but a clear definition can support the application.
4. Examples provided in the Scoring Guidelines for each of the points are not to be considered exhaustive.
5. Within a point, a response will not be penalized for incorrect information unless it *directly contradicts* correct information that would have otherwise earned a point. For example, if a response applies a concept in two contradictory ways (such as identifying both the independent and dependent variables as the independent variable or describing proactive interference as interference from both older and newer information), the point is not earned.
   NOTE: In certain cases, a response will not score if it includes a correct answer amongst multiple incorrect answers related to the same general concept/theory (e.g., a response that describes the Big Five trait of conscientiousness as being diligent, trusting, highly emotional, outgoing, and intellectually curious).
6. Within a bulleted question part, if the response addresses details from a scenario other than the one in the prompt, the point is not earned.

Part A Dr. Dawson is a psychologist who believes that students who read motivational statements before a test will experience lower levels of anxiety as compared with students who read neutral statements. To examine this belief, he conducted a study. In the study, he randomly assigned half of the participants to read motivational statements and the other half to read neutral statements. Immediately after reading the statements, all of the students completed a survey about their current level of anxiety (1 = low; 8 = high) and then took the test. Dr. Dawson found statistically significant results that are depicted in the graph.



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State a valid operational definition of the dependent variable in this study. **1 point**

Response must indicate that anxiety is defined by their score on the scale/survey of their anxiety.

Acceptable explanations include:

- *The dependent variable can be operationally defined as the score on the anxiety scale.*
- *The dependent variable is the score on the scale/survey.*
- *The dependent variable is the anxiety score from 1 to 8 (or 1 to 10).*

Unacceptable explanations include:

Responses that do not mention the scale/survey.

- *The operational definition is the level of anxiety.*
- *The operational definition is the anxiety score.*

Identify the control group in this study. **1 point**

Response must indicate that the control group is the group that reads the neutral statements.

Acceptable explanations include:

- *The control group is the group that reads neutral statements.*
- *The control group is the group that does not read positive statements.*

Unacceptable explanations include:

Responses that indicate the experimental group.

- *The control group is the group that reads the positive statements.*
- *The control group is the group that does not read the neutral statements.*

Explain why the study would be considered an experiment. **1 point**

Response must indicate that the study is experimental because an independent variable is manipulated, and/or the participants were randomly assigned to the groups in the study.

Acceptable explanations include:

- *The study is experimental because the students are randomly assigned to two conditions.*
- *The study is an experiment because a variable was manipulated.*

Unacceptable explanations include:

The response indicates random selection/sampling.

- *The study is experimental because they were randomly chosen to participate.*
- *The study is experimental because it tests a hypothesis.*

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Explain how the results of the study do or do not support Dr. Dawson's hypothesis. **1 point**

Response must indicate that Dr. Dawson's hypothesis is supported because either the motivational statement group had lower anxiety or the neutral statement group had higher anxiety.

Acceptable explanations include:

- *Dr. Dawson's hypothesis is supported because the motivational group had lower anxiety.*
- *Dr. Dawson's hypothesis is supported because the neutral statement group had higher anxiety.*

Unacceptable explanations include:

- *The results do not support Dr. Dawson's hypothesis.*
- *Dr. Dawson's hypothesis is supported because the motivational group had higher anxiety.*
- *Dr. Dawson's hypothesis is supported because the motivational group had low anxiety.*

Part B The test Dr. Dawson gave was a vocabulary test. Explain how the following terms might relate to the students who performed poorly on the test in this study.

External locus of control **1 point**

Response must indicate that students may perform poorly because they believe that factors outside of themselves (e.g., fate, luck, destiny, circumstances, other people) are responsible for their performance.

Acceptable explanations include:

- *Students who believe that fate determines their scores on the test won't perform as well.*
- *Students who believe that the unfairness of their teacher determines their score won't pass the test.*

Unacceptable explanations include:

Responses that do not include a cognitive component (e.g., perception, belief, thought) do not score.

- *Students did badly because the questions were too hard.*

Responses that refer to internal locus of control do not score.

- *Students believe they can control how they do on the test.*

Responses that refer to lack of control without mention of an outside factor do not score.

- *The students may think there is nothing they can do, so they perform worse on the test.*
- *The students did poorly on the quiz because they believed they lacked the ability to do well.*

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Stage one of Selye's general adaptation syndrome **1 point**

Response must indicate that the students' sympathetic nervous system or some specific aspect of their sympathetic nervous system is activated which interferes with taking the test.

OR

Response indicates that the students' fight-or-flight mechanism is activated, which interferes with them taking the test.

NOTE: Students are not required to identify the name of the stage in order to earn the point.

Acceptable explanations include:

- *Students' fight or flight response might engage if they perceive the test as being a threat, so they might score lower than if they weren't stressed.*
- *Students' heart rates increased, and they performed poorly.*

Unacceptable explanations include:

Responses that do not indicate poor performance on the test do not score.

Responses that refer to being "alarmed," "stressed," or "aroused" but do not indicate a physiological element do not score.

- *The student was too alarmed or too aroused to perform well on the test.*
- *Students with anxiety might get sick because they've resisted stress so much.*

Crystallized intelligence **1 point**

Response must indicate that a lack of crystallized intelligence (e.g., accumulated knowledge, facts, general information, or vocabulary) could have hindered student performance on the test.

Acceptable explanations include:

- *Students who study the wrong vocabulary perform poorly.*
- *Students who do not have prior knowledge do poorly on the test.*

Unacceptable explanations include:

Responses that refer to general intelligence or fluid intelligence do not score.

- *Students may not be able to come up with abstract answers quickly, so they score low on the test.*

Responses that refer to memories unrelated to knowledge on the test do not score.

- *The memory of a past bad experience on a test makes them perform poorly on the vocabulary test.*

Total for question 2 **7 points**

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Important: Completely fill in the circle that corresponds to the question you are answering on this page.

Question 1 ○ Question 2 ●

Begin your response to each question at the top of a new page. Do not skip lines.

→ An operational definition is a generalized amount / explanation (explication) of a ~~result~~ variable that allows a study to be replicated. The dependent variable is the students level of anxiety and an operational definition ~~would be~~ is how they would place their anxiety on a scale from 1-8.

→ a control group is the group in an experiment that does not recieve the variable being tested and thus allows the results of said variable (the independent) to be measured against the non-variable recieving group. In this case the ~~a~~ control group is the group that recieved the neutral statement.

→ ~~The~~ This study would be considered ~~an~~ an experiment because it measures cause and effect using an independent variable and accurately fights against confunding variables using random assignment and a control group.

→ the results of the study accurately support Dr. Dawsons hypothesis that students who read motivational quotes before a test will experience less stress. by showing how students who read the motivational ~~quotes~~ quotes on average claimed to be a 3 on the anxiety scale opposed to the control group that was on average a 7, Dr Dawsons hypothesis is supported by his data.

→ An external locus of control is when one feels the results of an activity or experience are due to ~~things~~ factors they cannot control and are up to chance. The students who performed poorly on the test may have felt that they did not have a say in how they did and this didn't study. this is because they believe~~d~~ that no matter how much they tried they still wouldn't be able to control the results and it was up to fate or God or some other external factor.

Use a pen with black or dark blue ink only. Do NOT write your name. Do NOT write outside the box.

● **Important:** Completely fill in the circle that corresponds to the question you are answering on this page.

Question 1 ○ Question 2 ●

Begin your response to each question at the top of a new page. Do not skip lines.

→ stage one of Selye's GAS is alarm, the intial reaction to a stressful stimulus that is marked by ~~action~~ of heightened arousal. students who performed poorly on the test entered stage one: alarm when first hearing ~~a~~ ~~the~~ about the test. their hearts began to beat faster and their breathing ~~was~~ quickened as the body entered flight or fight. (where they would then begin to resist)

→ crystallized intelligence is accumulated intelligence of facts and concrete/overcrete knowledge and wisdom that improves with age. the students who performed poorly on the test did not have a high crystallyzed intelligence because they did not know very many vocabulary words and have thus not accumulated much knowledge in that topic.

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Question 1 ○ Question 2 ●

Begin your response to each question at the top of a new page. Do not skip lines.

A) The operational definition of the dependent variable are the anxiety scores. The control group in this study are the students who were assigned to read neutral statements before a test. This study could be considered an experiment because it tests the effects of an independent variable, in this case the type of statements read, on a dependent variable, which were the levels of anxiety felt by students before a test. The results of the study support Dr. Dawson's hypothesis because the group of students that read motivational statements prior to a test ended up having anxiety scores that were 4 points less than the anxiety scores of the group that read neutral statements, which supports his hypothesis that students who read motivational statements prior to a test will experience lower levels of anxiety compared to students that read neutral statements.

B) Students who have an external locus of control may blame outside factors, such as the statement they read causing anxiety, for their poor results. Stage one of Selye's general adaptation syndrome may have played a role in the poor performances because those students weren't able to adapt to their test environment and reduce their anxiety. The students' crystallized intelligence may not have had the previous knowledge and experience with tested vocabulary words, resulting in them not spelling the words correctly and performing poorly on the test.

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Question 1 ○ Question 2 ●

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In Dr. Dawson's study the dependent variable is the [redacted] anxiety scores. The control group in this study is the groups, the motivational and neutral statements. This study is an experiment because it is testing or whatif question. The study also allowed for different variables and results. The results do support Dr. Dawsons hypothesis. His belief was that students who read motivational statements will have less anxiety going into the test. The results proved him right, the graph states the the group who read the motivational statements experienced less anxiety and their scores were lower, averaging a 3. The neutral statement group experienced higher anxiety levels than the motivational grap, scoring an average of 7.

The students who performed low on the vocabulary test might have believed the neutral statement creating a crystallized intelligence. The students external locus of control believed the statements

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Question 1 ○ **Question 2** ●

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leading the student to loss motivation and give up. Stage one of Selye's general adaption syndrome is the way a person adapts to what others say. This factors in to the students with poor scores that experienced neutral statements. Rather than the movitional statements that boosted the student self esteem and the belief that they will do good on the test.

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Question 2

Note: Student samples are quoted verbatim and may contain spelling and grammatical errors.

Overview

Responses to this question were expected to demonstrate an understanding of various characteristics of psychology research and to show how specific psychological terminology applied to the scenario, which described a study examining the effects of motivational statements on levels of anxiety. The responses needed to demonstrate an understanding of the operational definition of the dependent variable, the control group, the elements of an experiment, and whether the data presented support the hypothesis. Additionally, responses were expected to apply external locus of control, stage one of Seyle's general adaptation syndrome, and crystallized intelligence.

Sample: 2A
Score: 7

The **operational definition of the dependent variable point** scores because the response identifies the operational definition of the dependent variable (DV) as "how they would place their anxiety on a scale from 1-8." The **control group point** scores because the response identifies the control group as "the group that received the neutral statements." The **elements of an experiment point** scores because the response refers to the experiment as "using random assignment." The **data interpretation point** scores because the response explains that Dr. Dawson's hypothesis is supported by stating that the motivational group scored a 3 on the anxiety scale, as opposed to the neutral group, which scored a 7. The **external locus of control point** scores because the response indicates a cognitive component (belief) when it states, "one feels the results of an activity or experience are due to factors they cannot control and are up to chance," plus an external factor ("up to fate"), and the poor vocabulary test performance. The **general adaptation syndrome point** scores because the response identifies a physiological response ("hearts began to beat faster and their breathing quickened as the body entered fight or flight") and poor vocabulary test performance. (Note that any one of the physiological responses mentioned would score by itself.) The **crystallized intelligence point** scores because the response identifies crystallized intelligence as "accumulated intelligence of facts, knowledge, and wisdom" and links poor vocabulary test performance with the fact that the student "did not have a higher crystallized intelligence."

Sample: 2B
Score: 4

The **operational definition of the dependent variable point** does not score because the response does not refer to the survey/scale. "Anxiety scores" by itself does not score. The **control group point** scores because the response identified the control group as the students who read neutral statements. The **elements of an experiment point** does not score because the response does not mention manipulation of an independent variable and/or random assignment. The **data interpretation point** scores because the response explains that Dr. Dawson's hypothesis was supported by noting the difference between the groups ("the group of students that read motivational statements prior to a test ended up having anxiety scores that were 4 points less than the anxiety scores of the group that read neutral statements"). The **external locus of control point** scores because the response mentions a belief ("blames"), an external factor ("the statement they read causing anxiety"), and the poor performance

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Question 2 (continued)

on the test. The **general adaption syndrome** point does not score because the response does not include a physiological component of the sympathetic nervous system or "fight-or-flight response."

The **crystallized intelligence point** scores because the response describes an accurate explanation of crystallized intelligence (i.e., "previous knowledge and experience with tested vocabulary words") and relates this to their poor performance on the test.

Sample: 2C
Score: 1

The **operational definition of the dependent variable point** does not score because the response only mentions the anxiety scores and does not mention the survey/scale. The **control group point** does not score because the response refers to both the motivational and the neutral statements and does not identify which group is the control group. The **elements of an experiment point** does not score because the response does not refer to either random assignment of participants to groups or manipulation of the independent variable. The **data interpretation point** scores because the response explains that Dr. Dawson's hypothesis is supported by making reference to the graph, its depiction of the motivational statement group's lower scores, and the neutral statement group's higher scores. The **external locus of control point** does not score because the response does not describe a belief the student holds about some external factor that could have hampered their performance on the test. The **general adaptation syndrome point** does not score because the response does not mention activation of the sympathetic nervous system, activation of a physiological process (e.g., increased heart rate), or the fight-or-flight response. The **crystallized intelligence point** does not score because the response does not explain how a lack of accumulated or acquired knowledge hinders students' performance on the test.

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